

REMARKS/ARGUMENTS

Claims Amendments:

Claims 1 and 8 have been amended. No new matter has been added by way of these amendments.

Applicant has amended independent claims 1 and 8 to differentiate more clearly the claimed invention over the cited references. The features of claim 9 have been incorporated into independent claims 1 and 8, respectively. Accordingly, claim 9 has been cancelled without prejudice.

Claims Rejections - 35 USC § 103:

The Examiner rejects claims 1 to 13 under 35 U.S.C. § 103 as being unpatentable over Figures 1 and 2 (acknowledged prior art) of the present application in view of Deans (US 2004/0262008).

Claims 1 and 8 have been amended to emphasize the distinction over the prior art in reciting “*wherein the downloading and the executing of the application module are performed without interrupting the executing of the native application of the subsea controller*”. Specifically, the virtual machine implemented within the sub-sea controller enables the application module and the native application in the sub-sea controller to be executed without interruption.

The examiner acknowledges that Figures 1 and 2 of the present application (prior art) do not teach this feature, but then turns to Deans. However, Deans is concerned with a different type of independent operation, which is between a subsea communication hub 28 and subsea production control system 26. So while paragraph [0035] of Deans teaches that the communication system may be separate from the control system, this is wholly different to the claimed invention, which instead is directed at the execution of separate software within the controller (i.e. application module and native application).

That is, Deans is concerned with an independent communication system 26 and VPN, which is capable of communicating with the controller independent of its functionality, but there is no disclosure in Deans of any separate software functionality within the subsea controller itself, or more importantly, of a virtual machine in the subsea

controller of Deans for executing such software separately and without interruption as claimed.

Claims Rejections - 35 USC § 103:

Examiner raises a further rejection under 35 U.S.C. § 103 that claims 1 and 8 are unpatentable over Dean (US 6,422,315) in view of Marsh (US 2002/0159439). Examiner acknowledges that Dean does not teach a virtual machine in the subsea controller for executing the application module, but argues that Marsh teaches this.

1. No Suggestion to Combine Dean and Marsh

There is no suggestion in either Dean or Marsh that these references should be combined. A person skilled in the art at the time of the present invention would not consider the teachings of Marsh, since Marsh is concerned with a wholly different area of technology, i.e. telecommunications. Instead Dean is concerned with controlling apparatus in a subsea drilling operation, and these fields lie in wholly unrelated areas.

Moreover, there is no suggestion that the skilled person faced with either Dean or Marsh would even be aware of the problem of a subsea controller requiring software updates, since this is not mentioned in Dean or Marsh. Dean merely teaches at column 5 lines 63 to 66 that once software for the controller has been downloaded it runs continuously. There is no mention of updating the software for subsea controllers in Dean, since it is concerned with the entirely different problem of retrieving subsea pod containers.

As mentioned already Marsh is concerned with a wholly different context, i.e. telecommunications, and thus is also not concerned with the problem of software updates for a subsea controller. Indeed, the identification of this very problem of carrying out software updates for a subsea controller is not discussed in any of the cited art and is in itself a prima facie indication that the claimed invention is non-obvious.

Examiner is reminded that combination of references should not be performed with hindsight of the invention in mind, which would include an identification of the problem to be solved by the claimed invention, and it is improper to use an Applicant's claim as a roadmap or motivation for combining references.

2. Combination of Dean and Marsh would change principle operation of either

Combining Dean and Marsh does not seem to result in anything operable, or even discernible. There is no clear disclosure in Marsh of where the virtual machine is loaded in the telecommunications network. It seems to be loaded onto a download server 62 from paragraph [0031], but this is wholly different from a virtual machine loaded onto a subsea controller.

Applicant fails to discern how Dean could reasonably be modified by Marsh or vice versa. Specifically, Dean requires that once the controller has been downloaded with its software it runs continuously and is totally independent of the network (see col. 5 lines 63-66 of Dean). Thus, Dean cannot be modified with software updates since it runs totally independently of the network, which is in contradistinction of Marsh whose functionality relies on constant interaction with the connected network.

Thus, it is respectfully submitted the principle of operation of Dean and Marsh are wholly different and physically incompatible.

3. Combination of Dean and Marsh does not result in claimed invention

Even if the skilled person was aware of the problem of trying to provide software updates and could combine Dean and Marsh in some reasonable manner, he would still not arrive at the claimed invention.

Specifically, Marsh has nothing to do with a subsea controller, and as such even if Marsh and Dean were combined they do not disclose the claimed solution of using a virtual machine within a subsea controller. More specifically, the combination does not teach using a virtual machine within a subsea controller so as not to interrupt the native applications executed thereon for managing a plurality of tools in a subsea well.

Examiner is also reminded that the claims should be read as a whole when assessing patentability, rather than simply juxtaposing features from unrelated references.

None of the prior art references, either taken alone or combines, teaches the feature of executing separate software programs in the subsea controller without interruption. Moreover, there is no disclosure that such independent execution is facilitated due to a virtual machine implemented in the controller for performing this separate execution.

CONCLUSION

Applicant is of the opinion that this reply is fully responsive to all outstanding issues. Accordingly, the application is now deemed to be in condition for allowance, and favorable reconsideration on the basis of these remarks is solicited.

This paper is submitted in response to the Office action mailed May 12, 2009 for which the three-month date for response was August 12, 2009. Pursuant to 37 C.F.R. § 1.136(a), Applicant petitions for an extension of time of three months bringing the deadline for response to November 12, 2009, which is within the six-month statutory period.

Please apply any charges not covered, or any credits, to Deposit Account 50-2183 (Reference Number 21.1140). If the Examiner deems that any issue remains after considering this paper, the Examiner is invited to contact the undersigned attorney to expedite the prosecution of the application and engage in a joint effort to work out a mutually satisfactory solution.

Schlumberger Technology Corporation
Sugar Land Product Center
200 Gillingham Lane, MD 200-9
Sugar Land, Texas 77478
(281) 285-8377
(281) 285-8821 Fax
Date: November 12, 2009

Respectfully submitted,

/Myron K. Stout/
Myron K. Stout
Reg. No. 59,852
Attorney for Assignee